Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims in the application.

Listing of the Claims

Claim 1. (Cancelled)

2. (Currently amended) ~~The method of claim 1~~ An *in vitro* method for detecting a cancer-associated marker protein present in a bodily fluid of a mammal comprising:

(a) contacting a sample of bodily fluid from said mammal with antibodies directed against at least one epitope of the marker protein; and

(b) detecting the presence of any complexes formed between said antibodies and the marker protein present in the sample;

wherein the antibodies are mammalian autoantibodies, which are derived from the same species as the mammal from which the sample has been obtained,

wherein the sample is from a mammal substantially asymptomatic for pre-neoplasia or cancer, and

wherein, the cancer-associated marker protein is a modified form of a wild-type protein, and

wherein detection of the complexes indicates the presence of the cancer-associated marker protein in the bodily fluid.

3. (Currently amended) The method of ~~claim 1~~ Claim 55 wherein the sample is from a mammal symptomatic for cancer.

4. (Currently amended) The method of ~~claim 1~~ Claim 55 wherein the sample is from a mammal that has received therapy for cancer.

Claims 5-51. (Cancelled)

52. (Currently amended) The method of ~~claim 1~~ Claim 2 wherein the mammal is a human and the autoantibodies are human autoantibodies.

53. (Currently amended) The method of ~~claim 1~~ Claim 2 wherein the bodily fluid is plasma, serum, whole blood, urine, feces, lymph, cerebrospinal fluid or nipple aspirate.

54. (Currently amended) The method of ~~claim 1~~ Claim 2 wherein the cancer-associated marker protein is associated with breast cancers, colorectal cancers, lung cancers, pancreatic cancers, prostate cancers, cervical cancers, ovarian cancers, endometrial cancers or cancers of the skin.

55. (Currently amended) ~~The method of claim 1~~ An *in vitro* method for detecting a cancer-associated marker protein present in a bodily fluid of a mammal comprising:

(a) contacting a sample of bodily fluid from said mammal with antibodies directed against at least one epitope of the marker protein; and

(b) detecting the presence of any complexes formed between said antibodies and the marker protein present in the sample;

wherein the antibodies are mammalian autoantibodies, which are derived from the same species as the mammal from which the sample has been obtained,

wherein the cancer-associated marker protein is a breast cancer associated marker protein, and

wherein, the cancer-associated marker protein is a modified form of a wild-type protein, and

wherein detection of the complexes indicates the presence of the cancer-associated marker protein in the bodily fluid.

56. (Currently amended) ~~The method of claim 1~~ An *in vitro* method for detecting a cancer-associated marker protein present in a bodily fluid of a mammal comprising:

(a) contacting a sample of bodily fluid from said mammal with antibodies directed against at least one epitope of the marker protein; and

(b) detecting the presence of any complexes formed between said antibodies and the marker protein present in the sample;

wherein the antibodies are mammalian autoantibodies, which are derived from the same species as the mammal from which the sample has been obtained,

wherein the cancer-associated marker protein is a modified form of a wild-type MUC1, BRCA1, p53, c-myc, c-erbB2 or Ras protein, and

wherein detection of the complexes indicates the presence of the cancer-associated marker protein in the bodily fluid.

57. (Previously presented) The method of claim 55 wherein the cancer-associated marker protein is a modified MUC1, BRCA1, BRCA2, p53, c-myc, c-erbB2 or Ras protein associated with primary breast cancer.

58. (Previously presented) The method of claim 55 wherein the cancer-associated marker protein is a modified MUC1, BRCA1, BRCA2, p53, c-myc, c-erbB2 or Ras protein associated with advanced breast cancer.

59. (Previously presented) The method of claim 57 wherein the autoantibodies are obtainable from mononucleocytes isolated from a patient with primary breast cancer.

60. (Previously presented) The method of claim 58 wherein the autoantibodies are obtainable from mononucleocytes isolated from a patient with advanced breast cancer.

61. (Currently amended) ~~The method of claim 1~~ An *in vitro* method for detecting a cancer-associated marker protein present in a bodily fluid of a mammal comprising:

(a) contacting a sample of bodily fluid from said mammal with antibodies directed against at least one epitope of the marker protein; and

(b) detecting the presence of any complexes formed between said antibodies and the marker protein present in the sample;

wherein the antibodies are mammalian autoantibodies, which are derived from the same species as the mammal from which the sample has been obtained,

wherein the autoantibodies are produced by an immortalized cell or cell population, and

wherein detection of the complexes indicates the presence of the cancer-associated marker protein in the bodily fluid.

62. (Currently amended) The method of ~~claim 1~~ Claim 2 wherein the autoantibodies are polyclonal antibodies.

63. (Currently amended) The method of ~~claim 1~~ Claim 2 wherein the autoantibodies are immobilized on a solid surface.

64. (Previously presented) The method of claim 63 wherein any complexes formed between the autoantibodies and any cancer-associated marker protein present in the sample are detected using secondary antibodies or autoantibodies specific for at least one epitope of said marker protein, the secondary autoantibodies carrying a detectable label.

65. (Previously presented) The method of claim 63 wherein in addition to the sample a labeled cancer-associated marker protein is added carrying at least one epitope recognized by the autoantibodies.

66. (Currently amended) An *in vitro* method for detecting a breast cancer-associated marker protein present in a bodily fluid of a mammal to screen for recurrence of cancer after a treatment, to monitor systemic therapies or to select therapies comprising:

(a) contacting a sample of bodily fluid from said mammal with antibodies directed against at least one epitope of the marker protein, wherein the antibodies are mammalian autoantibodies to the cancer-associated marker protein and derived from the same species as the mammal from which the sample has been obtained; and

(b) detecting the presence of any complexes formed between the antibodies and the marker protein present in the sample;

wherein the cancer-associated marker protein is a modified form of a wild-type protein, and wherein detection of the complexes indicates the presence of the cancer-associated marker protein in the bodily fluid.